

## **REMARKS**

Reconsideration and allowance are respectfully requested in view of the following remarks.

By this amendment, claims 1 is amended. Claims 1-9 and 50-64 are pending in the application with claims 1 and 57 being independent.

### **Claim Rejections Under 35 U.S.C. § 101**

Claims 1-9 and 50-56 are rejected under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter. Specifically, it is asserted in the Office Action that these claims are directed to an unpatentable abstract idea. Applicants disagree with this interpretation. However, in an effort to obviate the rejection, Applicants have amended claim 1 to specifically recite that various steps are performed in a computer, in accordance with the Examiner's suggestion on page 3 of the Office Action.

Since claim 1 has been amended as the Examiner suggested, withdrawal of the rejection under 35 U.S.C. §101 is respectfully requested.

### **Claim Rejection Under 35 U.S.C. § 102**

Claims 1, 4, 6, 50, 51, 54-58, 61, 63 and 64 are rejected under 35 U.S.C. §102(e)<sup>1</sup> as allegedly being anticipated by Brill et al. (U.S. Patent No. 6,542,621, hereinafter "Brill"). The rejection is respectfully traversed.

Claim 1 recites a method for identifying objects in an image. The method of claim 1 comprises receiving an image with a first resolution, where the image

---

<sup>1</sup> Applicants assume that the characterization on page 4 of the Office Action of the rejection being under 35 U.S.C. §102(b) is a typographical error, since Brill indicates a publication date of April 1, 2003, which is less than one year before the July 18, 2003 filing date of the present application.

represents a scene that includes physical objects. The method of claim 1 comprises transforming the image at the first resolution to an image at a second resolution, where the first resolution is higher than the second resolution.

In addition, the method of claim 1 comprises processing the image at the second (lower) resolution to identify an object among the physical objects in the image at the second (lower) resolution. The method of claim 1 also comprises selecting a detection algorithm from among plural detection algorithms based on a condition associated with the object identified at the second (lower) resolution.

Furthermore, the method of claim 1 comprises processing the image at the first resolution using the object identified at the second (lower) resolution to identify another object from among the physical objects in the image at the first (higher) resolution according to the selected detection algorithm.

Accordingly, claim 1 recites that a condition associated with an object identified at a lower resolution is used to select a detection algorithm, and the selected detection algorithm is used to identify another object at a higher resolution.

In contrast to claim 1, which is directed to identifying objects in an image, the portions of Brill relied upon by the Examiner in rejecting claim 1 is directed to tracking objects in a video i.e. a sequence of images. In numbered paragraph 5 of the Office Action, the Examiner acknowledges this difference but appears to believe that the distinction is irrelevant. This assertion is unsupportable at least because Brill does not disclose a method for identifying objects in an image where that same image is processed at different resolutions to identify an object and another object, as provided for in claim 1.

The Examiner states that Brill selects among plural detection algorithms based on the height of an object. A summary of how the Examiner characterizes these "algorithms" is as follows:

1. One detection algorithm detects the object as a person if the height is above a threshold vertical height (of the bounding box).
2. Another detection algorithm maps the endpoints of the lower side of the bounding box to determine the height. (emphasis added)
3. Another detection algorithm is if the determined height is not tall enough to be a person, to use alternate detection algorithms and detect the object as a briefcase, notebook, box, or computer monitor.

The Examiner also states that it is implied even these alternate detection algorithms may be different.

Number 1 above does not select any algorithm, it merely classifies the object as a person.

Number 2 above cannot be an algorithm selected based on the height of an object because it determines the height. It is impossible to select an algorithm based on a value (e.g. height) that is not yet determined. Instead, col. 5, lines 11-23 of Brill disclose an alternative height calculation method.

Furthermore, even if the above can be considered algorithms, which Applicants do not concede, the "algorithms" are not used to detect another object in the higher resolution version of the same image.

The Examiner emphasizes in the Office Action that he considers the "another object" to correspond to parts of another person that overlaps with a first person (hereinafter referred to as "overlapping regions").

Brill does not consider the overlapping regions to be detected objects, but rather part of an already-detected object, a person in the case of Figs. 6A. On the contrary, the types of objects Brill provides as examples are person, briefcase,

notebook, a box, etc. Accordingly, the overlapping regions cannot correspond to a "detected object", as recited in claim 1.

Further, the video processing methods of Brill cannot determine overlapping regions of two objects without looking at previous video frames containing the two objects separate from each other. In the example of Fig. 3A of Brill, two persons are detected. In subsequent frames, the persons are tracked, even if they overlap (e.g. as in Figs. 6A-6D), by using p-templates. According to Brill, p-templates are images which represent the prior probabilities of the person locations based on the previous video image. See, for example, col. 5, line 55-col. 6, line 65.

Thus, the portions of Brill the Examiner considers to correspond to the receiving, transforming, processing the image at the second resolution, and selecting steps of claim 1 occur in a previous frame. The portions of Brill the Examiner considers to correspond to the processing the image at the first resolution step are performed in a current frame. Thus, Brill does not disclose processing the image at the second resolution to identify an object, and processing the image at the first resolution to identify another object, as recited in claim 1. In contrast to the multi-frame video analysis of Brill, Claim 1 provides that the same image is processed at different resolutions to detect an object and another object.

The Examiner also states that that the overlapped regions would not be detected if not for the selected detection algorithm that detected a first person, so the overlapped regions are considered "in accordance with the selected detection algorithm". This is not a reasonable interpretation of Brill as applied to claim 1. Claim 1 recites "processing the image at the first resolution [...] to identify another object [...] in the image at the first resolution according to the selected detected algorithm."

Thus, the selected detected algorithm (for the sake of argument, numbers 1-3 above) would need to process the image at the first resolution to detect the another object. The Examiner merely calls back to the first execution of the "detection algorithm". The "detection algorithm" asserted by the Examiner is not executed again in Brill to detect the overlapping regions.

For at least the foregoing reasons, Brill does not disclose all of the features of independent claim 1. Accordingly, independent claim 1 is allowable. Independent claim 57 is also allowable, for at least similar reasons to those presented above with respect to allowable claim 1. Dependent claims 2-9, 50-56, and 58-64 are allowable by virtue of their dependency from allowable claims 1 and 57, and on their own merits.

**Claim Rejections Under 35 U.S.C. § 103**

Claim 7 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Brill in view of Hsu (U.S. Patent No. 6,618,490, hereinafter "Hsu").

Hsu does not remedy the deficiencies of Brill for failing to disclose all of the features of claim 1. Accordingly, claim 7 is also allowable.

**Conclusion**

From the foregoing, further and favorable action in the form of a Notice of Allowance is respectfully requested.

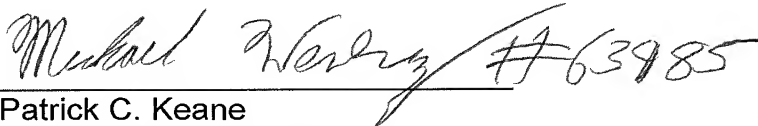
In the event that there are any questions concerning this amendment, or the application in general, the Examiner is respectfully requested to telephone the undersigned so that prosecution of present application may be expedited.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: January 5, 2010

By:

  
for Patrick C. Keane  
Registration No. 32858

**Customer No. 21839**  
703 836 6620